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09/661,674	09/14/2000	Mark I. Snyder	56180.0900	9548

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EXAMINER
GODDARD, BRIAN D

ART UNIT	PAPER NUMBER
2171	

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/661,674	Applicant(s) SNYDER ET AL.	
	Examiner Brian Goddard	Art Unit 2171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 September 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "410" has been used to designate both a current heading indicator (page 10, line 10) as a line extending from the aircraft, and an unknown element in the upper left corner of the cylinder.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The second "to" should be "top" in the phrase "to the to of the range ring" on page 10, line 12 of the instant specification. Also, it is unclear what the ' symbol in the phrase "for every 30' of arc" stands for on page 10, line 28. This symbol (') could be used to designate feet or degrees (although commonly designated as ^{o}). Appropriate correction or clarification is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim recites the limitation "said aircraft" in lines 22 and 23 of page 17. There is insufficient antecedent basis for this limitation in the claim. In the interest of compact prosecution, the examiner assumes that "said aircraft" should be "an aircraft" in taking the broadest interpretation of the claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of U.S. Patent No. 6,308,132. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 simply applies the limitations of the patented claim to avionics data for an aircraft, which was an intended application of the patented claim

anyway. See the Background of the Invention section of the patent's specification for this disclosure.

The step of "providing a database including navigational data" is taught by the patented claim in the preamble and step a) of claim 1.

The step of "projecting and culling said database in accordance with a defined map region" is taught by the patented claim in claim 7.

The step of "creating a projected display database" is taught by the patented claim in step b) of claim 1.

The step of "modifying said display database in accordance with avionics data associated with said aircraft" is taught by the patented claim in step c) of claim 1 and claim 8.

The step of "displaying said display database in accordance with said modifying step" is taught by the patented claim in step d) of claim 1.

5. Claim 2 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 19 of U.S. Patent No. 6,308,132. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 2 simply applies the limitations of the patented claim to avionics data for an aircraft, which was an intended application of the patented claim anyway. See the Background of the Invention section of the patent's specification for this disclosure.

"A cursor control device (CCD) configured to accept input from a user" is taught by the patented claim as "a control input device" in claim 19. Although a 'cursor' control device is not explicitly claimed in the patent, this is a common form of control input device. See column 5, lines 21 et seq. of the patent's specification for this disclosure.

"A display computer coupled to said CCD..." is taught by the patented claim in parts a), b) and d) of claim 17.

The display computer configured to:

"Project and cull said database..." and

"Create a projected display database" are taught by the patented claim in part c) of claim 17.

"Modify said display database..." and

"Display said display database..." are taught by the patented claim in parts c) and d) of claim 17.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,920,276 to Frederick in view of U.S. Patent No. 5,596,500 to Sprague et al.

Frederick discloses a system and method for the display of navigational data associated with an aircraft in the form of a map display. See Figures 1-3 and the corresponding portions of the specification for this disclosure. Refer specifically to column 7, line 28 through column 8, line 64 of Frederick's specification for the details of this disclosure.

In claim 1:

"Providing a database [93] including navigational data" is taught by Frederick as the navigational database (93) of Figure 1. Frederick's terrain database (94) is also "a database including navigational data."

"Projecting ['converts the data to x, y coordinates for display'] and culling ['retrieves such latitude and longitude addresses from'] said database ['the navigational and terrain data bases 93 and 94'] in accordance with a defined map region ['within a selected distance from the aircraft']" is taught by Frederick in column 8, lines 35-50. However, Frederick's projecting step ("converts the data to x, y coordinates for display") does not convert the data directly from the databases (93 and 94), but converts a modified form of the data as discussed below with regard to the fourth claimed step.

"Creating a projected display database" is not explicitly taught by the Frederick reference. However, Frederick's moving map generator (89) does use a display RAM (95) to store the projected x, y coordinates discussed above for display. This provides suggestion for creating a projected display database to store this information.

"Modifying said display database in accordance with avionics data ['heading information, aircraft position information, and track information'] associated with said aircraft" corresponds to Frederick's disclosure in which, "From all of this information, the moving map generator 89 constructs or generates a map display...." (Column 8, lines 43-48) Also see column 7, lines 56-58 of Frederick's specification for the disclosure of the avionics data listed above. Although it is not explicitly stated, the terrain and navigational data must be modified in some way in order to construct the map display taking all of the above information into consideration.

"Displaying said display database in accordance with said modifying step" corresponds to Frederick's disclosure in which, "The data from the display RAM 52...and the display RAM 95...produce on the cathode ray tube 56 a plan view image showing...." (Column 8, lines 54-58)

Thus, Frederick does not explicitly disclose the use of an intermediate "projected display" database, and does not disclose projecting the data before modifying it with the avionics data from the aircraft. The Sprague reference teaches a method for projecting latitude/longitude coordinates into displayable x, y data coordinates and storing this data in a database. See Figure 6 and the corresponding portion of Sprague's specification for this disclosure. Refer specifically to column 7, lines 18-25 for the details of this disclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Frederick's moving map generator such that it would

convert (project) the latitude and longitude data from the terrain and navigational databases (93 and 94) into x, y coordinates at the same time it originally retrieved (culled) this data as above, and to store the culled and projected x, y coordinates in a display database as taught by Sprague's method above, before modifying this data with the aircraft's avionics data and displaying the resulting image. One would have been motivated to do so because Frederick's specification provided suggestion as such above, and because it would have been computationally more efficient to project the latitude/longitude coordinates into x, y displayable coordinates immediately after retrieval.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frederick in view of Sprague as applied to claim 1 above, and further in view of U.S. Patent No. 5,978,715 to Briffe et al.

The method of Frederick in view of Sprague as discussed above with regard to claim 1 was realized within Frederick's display computer of Figure 1. See Figures 1-3 and the corresponding portions of Frederick's specification, including the Abstract and Summary of the Invention sections, for this disclosure.

In claim 2:

"A cursor control device (CCD) configured to accept input from a user" is not explicitly disclosed by the combination above. However, Frederick's system does include a plurality of control knobs configured to accept input from the pilot of the aircraft. See Figures 2 and 3 and the corresponding portions of the

specification for this disclosure. This provides suggestion for using commonly used input devices for the pilot to control the display computer described below.

"A display computer [Figure 1] coupled to said CCD...wherein said display computer is further coupled to a display [cathode ray tube (CRT) 56] and at least one database [navigational database 93 and terrain database 94] including navigational data" is taught by Frederick as the computer of Figure 1, and discussed in the Abstract and column 2, line 21 et seq.

"Said display computer further configured to..." is taught by the combination of Frederick and Sprague as discussed above with regard to claim 1. See that discussion for the details of this disclosure.

Thus, Frederick's system in light of Sprague's disclosure does not include a cursor control device as a means for user input as claimed. Briffe discloses a system similar to that of Frederick. See Figures 1, 2 and 5 and the corresponding portions of the specification for this disclosure. Refer specifically to column 10, lines 34-43 for Briffe's disclosure of a track-ball (44) or "other cursor control devices, such as a touch-panel" for processing user input to control the display computer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach Briffe's track-ball, or any other commonly used cursor control device, to Frederick's display computer system as a means of input to the system from the pilot. One would have been motivated to do so because it would have made such input easier for the pilot, and Frederick's specification provides suggestion for doing such as above.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,317,690 to Gia discloses a path planning and terrain avoidance display system for an aircraft. See Figure 1; column 3, line 57 – column 5, line 5; column 8, lines 33-58; and column 9, line 46 – column 10, line 5.

U.S. Patent No. 6,219,592 to Muller et al. discloses a terrain awareness display system for an aircraft. See Figures 1 and 23-26; column 4, line 61 – column 5, line 25; column 6, line 7 – column 8, line 55; and column 21, line 40 – column 24, line 44.

U.S. Patent No. 6,208,284 to Woodell et al. discloses a radar augmented display system for an aircraft. See column 3, lines 13-19.

U.S. Patent No. 6,021,374 to Wood discloses a terrain conflict detector for an aircraft with video display. See Figures 3-6; the Abstract; column 9, line 40 – column 10, line 4; and column 10, line 51 – column 12, line 27.

U.S. Patent No. 6,249,857 to Klapman et al. discloses a graphics-processing unit. See column 5, lines 51-64.

U.S. Patent No. 6,092,076 to McDonough et al. discloses a system and method for map display in a navigation application. See column 6, line 62 – column 8, line 28; and column 12, line 61 – column 13, line 20.

U.S. Patent No. 5,838,262 to Kershner et al. discloses an aircraft virtual image display system. See Figures 1 and 4; column 5, line 57 – column 6, line 18; and column 9, line 11 – column 10, line 62.

U.S. Patent No. 5,574,835 to Duluk et al. discloses the culling and projection of a multi-dimensional database into a display database for a two-dimensional image. See column 28, lines 36-52.

U.S. Patent No. 5,422,814 to Sprague et al, U.S. Patent No. 6,247,019 to Davies, U.S. Patent No. 6,246,960 to Lin, U.S. Patent No. 6,163,749 to McDonough et al, U.S. Patent No. 6,026,346 to Ohashi et al, U.S. Patent No. 6,088,654 to Lepere et al, U.S. Patent No. 6,157,891 to Lin, and the three non-patent articles from IEEE are all relevant to the background of applicants' disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Goddard whose telephone number is 703-305-7821. The examiner can normally be reached on M-F, 9 AM - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

bdg
October 18, 2002

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